UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/493,701 | 01/28/2000 | Adam J. Weissman | 003.P001CIP | 2554 |

7590 07/16/2003

CALENDAR/DOCKET DEPARTMENT
PILLSBURY WINTHROP LLP
725 S. FIGUEROA STREET
SUITE 2800
LOS ANGELES, CA 90017

| EXAMINER | |
|---|---|
| WASSUM, LUKE S | |
| **ART UNIT** | **PAPER NUMBER** |
| 2177 | 11 |

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/493,701 | WEISSMAN ET AL. | |
| | Examiner | Art Unit | |
| | Luke S. Wassum | 2177 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *30 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *16-25,27-62,64,65,67 and 72* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-25,27-62,64,65,67 and 72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 January 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 April 2003 has been entered.

### *Response to Amendment*

2. The Applicants' amendment, filed 30 April 2003, has been received, entered into the record, and considered.

3. As a result of the amendment, claims 1, 26, 63, 66 and 68-71 have been canceled, claims 16, 17, 24, 32, 45, 53 and 67 have been amended, and new claim 72 has been added. Claims 16-25, 27-62, 64, 65 and 72 remain pending in the application.

### *The Invention*

4. The claimed invention is directed to a system in which a semantic space is searched in order to determine the semantic distance between two locations, and wherein portions of a semantic space can be targeted by advertisers, and a cost for transmitting advertisements in response to a user query is determined.

*Claim Objections*

5. Claims 37 and 58 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

6. Regarding claims 37 and 58, in both cases, the parent claim includes the limitations of claims 18 and 39 respectively, wherein the 'set of concepts' is defined. Claims 37 and 58, while not using identical language, both recite claim limitations which are substantially the same as those of antecedent claims 18 and 39 respectively.

*Claim Rejections - 35 USC § 112*

7. As a result of the amendments to the claims, the rejections of claims 1, 35-38, 56-59, 63 and 66-71 under U.S.C. §112, first paragraph, are withdrawn.

8. As a result of the amendments to the claims, the rejections of claims 24, 32, 45, 53, 67 and 68 under U.S.C. §112, second paragraph, are withdrawn.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claim 61 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

11. Regarding claim 61, the examiner has failed to locate a disclosure in the specification teaching the determination of the price for retrieving target data. Beginning on page 38, the specification discloses a method for determining the price for being included in the target data (the price paid by advertisers), but does not discuss a price for retrieving (to be paid by the user).

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 36, 38, 57 and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Regarding claims 36 and 57, parent claims 35 and 56 both cite the limitation that the set of concepts associated with said data item is predetermined. However, dependent claims 36 and 57 respectively contain limitations that the set of concepts associated with said data item is specified by the user. Since the set of concepts cannot be both predetermined and selectable by the user, the claims are rendered indefinite.

15. Furthermore, regarding claims 38 and 59, these claims cite the limitation that the set of concepts is established based on the user's selection of at least one meaning for said data item. Once again, since the set of concepts cannot be both predetermined and established based on user actions, the claims are rendered indefinite.

*Claim Rejections - 35 USC § 102*

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 16-19, 21-24, 27, 29, 31-33, 35, 37, 39, 40, 42-45, 48, 50, 52-54, 56 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by **Caid et al.** (U.S. Patent 5,619,709).

18. Regarding claim 16, **Caid et al.** teaches a method as claimed, comprising:

a) organizing concepts according to their meaning into a lexicon of predefined known relationships between the concepts, said lexicon defining elements of a semantic space (see extensive discussion of the development of a lexicon, at col. 5, line 15 through col. 9, line 46);

b) receiving a first input associated with a first set of concepts from said lexicon, said first input representing a first location in the semantic space (see discussion of context vector clustering, col. 9, line 48 through col. 10, line 32, wherein 'each summary vector in sequence', col. 10, line 6, is analogous to the claimed first input; see also disclosure

regarding retrieval process, col. 11, line 6 through col. 12, line 30, wherein 'query vector' is analogous to the claimed first input);

c) receiving a second input associated with a second set of concepts from said lexicon, said second input representing a second location in a semantic space (see discussion of context vector clustering, col. 9, line 48 through col. 10, line 32, wherein 'the centroid of each of the k-clusters', col. 10, lines 6-7, is analogous to the claimed second input; see also disclosure regarding retrieval process, col. 11, line 6 through col. 12, line 30, wherein 'summary vector' is analogous to the claimed second input); and

d) determining a semantic distance from the first location to the second location by combination of the semantic distance between each concept in the first set of concepts and each concept in the second set of concepts (see discussion of context vector clustering, col. 9, line 48 through col. 10, line 32, wherein the distance is calculated to find the cluster with the nearest centroid, col. 10, lines 7-11; see also disclosure regarding retrieval process, col. 11, line 6 through col. 12, line 30, wherein the distance between vectors is calculated to find the closest summary vector to the query vector, col. 12, lines 7-8).

19. Regarding claim 17, **Caid et al.** teaches a method as claimed, comprising:

a) creating a lexicon of predetermined known relationships between concepts that defines elements of a semantic space (see extensive discussion of the development of a lexicon, at col. 5, line 15 through col. 9, line 46);

b) receiving an input associated with a first set of concepts from said lexicon and representing a first location in the semantic space (see disclosure regarding retrieval

process, col. 11, line 6 through col. 12, line 30, wherein 'query vector' is analogous to the claimed first input);

c) maintaining a target data set, wherein target data is associated with a second set of concepts from said lexicon that represents a second location in the semantic space (see disclosure regarding retrieval process, col. 11, line 6 through col. 12, line 30, wherein 'summary vectors' are analogous to the claimed target data set);

d) determining a semantic distance from the first location in the semantic space to the second location in the semantic space for each target data, wherein said semantic distance is determined by combination of the relative closeness in meaning between each concept in the first set of concepts and each concept in the second set of concepts (see disclosure regarding retrieval process, col. 11, line 6 through col. 12, line 30, wherein the distance between vectors is calculated to find the closest summary vector to the query vector, col. 12, lines 7-8); and

e) presenting results of a search conducted on the target data set for the target data close in meaning to the input based on the determined semantic distance (see disclosure that the results are displayed to the user, col. 11, lines 22-23).

20. Regarding claim 18, **Caid et al.** teaches a method as claimed, wherein the input is a data item (see col. 11, lines 8-10), and the associated set of concepts represents at least one of the meaning of said data item and important concepts relevant to the data item (see col. 11, lines 8-15).

21. Regarding claim 19, **Caid et al.** teaches a method as claimed, wherein the data item is text (see col. 2, lines 32-38; see also col. 11, lines 8-10).

22. Regarding claim 21, **Caid et al.** teaches a method as claimed, wherein said text is derived from audio data (see col. 16, lines 51-54 et seq.).

23. Regarding claim 22, **Caid et al.** teaches a method as claimed, wherein said text is derived from video data (see col. 16, lines 51-54 et seq.).

24. Regarding claim 23, **Caid et al.** teaches a method as claimed, wherein said text is used to label an entity (see col. 11, lines 8-10, wherein the user specifies a document).

25. Regarding claim 24, **Caid et al.** teaches a method as claimed, wherein said labeled entity is one from the group of an image, video, sound file or document (see col. 11, lines 8-10, wherein the user specifies a document; see also col. 2, lines 32-35, wherein the context vector is associated with an image or document; see also col. 16, lines 51-54 et seq.).

26. Regarding claim 27, **Caid et al.** teaches a method as claimed, wherein said text is a user query (see col. 11, lines 8-10).

27. Regarding claim 29, **Caid et al.** teaches a method as claimed, wherein said text is a document (see col. 11, lines 8-10).

28. Regarding claim 31, **Caid et al.** teaches a method as claimed, wherein said text is an electronic communication (see discussion of a specific example of the DOCUVERSE system,

wherein electronic messages are selected and inspected based on their location in a semantic space, col. 33, lines 10-63).

29. Regarding claim 32, **Caid et al.** teaches a method as claimed, wherein said data item is one from the group of an image, video, sound file or document (see col. 11, lines 8-10, wherein the user specifies a document; see also col. 2, lines 32-35, wherein the context vector is associated with an image or document; see also col. 16, lines 51-54 et seq.).

30. Regarding claim 33, **Caid et al.** teaches a method as claimed, wherein said set of concepts is associated with a person (see col. 2, lines 33-35, disclosing that context vectors can be associated with people, among other things).

31. Regarding claim 35, **Caid et al.** teaches a method as claimed, wherein said set of concepts is predetermined (see disclosure that the first step of creating a document repository is to build context vectors for words using a sample of text, col. 12, line 47; see also discussion regarding the development of a lexicon, at col. 5, line 15 through col. 9, line 46, said lexicon being a prerequisite for the population of the semantic space with the summary vectors of documents, and the subsequent retrieval of said documents).

32. Regarding claim 37, **Caid et al.** teaches a method as claimed, wherein said set of concepts associated with said data item represents at least one from the group of the meaning of said data item and information relevant to said data item (see col. 11, lines 8-15).

33. Regarding claim 39, **Caid et al.** teaches a method as claimed, wherein the target data is a data item (see col. 11, lines 8-10), and the associated set of concepts represents at least one of the meaning of said data item and important concepts relevant to the data item (see col. 11, lines 8-15).

34. Regarding claim 40, **Caid et al.** teaches a method as claimed, wherein the data item is text (see col. 2, lines 32-38; see also col. 11, lines 8-10).

35. Regarding claim 42, **Caid et al.** teaches a method as claimed, wherein said text is derived from audio data (see col. 16, lines 51-54 et seq.).

36. Regarding claim 43, **Caid et al.** teaches a method as claimed, wherein said text is derived from video data (see col. 16, lines 51-54 et seq.).

37. Regarding claim 44, **Caid et al.** teaches a method as claimed, wherein said text is used to label an entity (see col. 11, lines 8-10, wherein the user specifies a document).

38. Regarding claim 45, **Caid et al.** teaches a method as claimed, wherein said labeled entity is one from the group of an image, video, sound file or document (see col. 11, lines 8-10, wherein the user specifies a document; see also col. 2, lines 32-35, wherein the context vector is associated with an image or document; see also col. 16, lines 51-54 et seq.).

39. Regarding claim 48, **Caid et al.** teaches a method as claimed, wherein said text is a user query (see col. 11, lines 8-10).

40. Regarding claim 50, **Caid et al.** teaches a method as claimed, wherein said text is a document (see col. 11, lines 8-10).

41. Regarding claim 52, **Caid et al.** teaches a method as claimed, wherein said text is an electronic communication (see discussion of a specific example of the DOCUVERSE system, wherein electronic messages are selected and inspected based on their location in a semantic space, col. 33, lines 10-63).

42. Regarding claim 53, **Caid et al.** teaches a method as claimed, wherein said data item is one from the group of an image, video, sound file or document (see col. 11, lines 8-10, wherein the user specifies a document; see also col. 2, lines 32-35, wherein the context vector is associated with an image or document; see also col. 16, lines 51-54 et seq.).

43. Regarding claim 54, **Caid et al.** teaches a method as claimed, wherein said set of concepts is associated with a person (see col. 2, lines 33-35, disclosing that context vectors can be associated with people, among other things).

44. Regarding claim 56, **Caid et al.** teaches a method as claimed, wherein said set of concepts is predetermined (see disclosure that the first step of creating a document repository is to build context vectors for words using a sample of text, col. 12, line 47; see also discussion regarding the development of a lexicon, at col. 5, line 15 through col. 9, line 46, said lexicon being a prerequisite

for the population of the semantic space with the summary vectors of documents, and the subsequent retrieval of said documents).

45. Regarding claim 58, **Caid et al.** teaches a method as claimed, wherein said set of concepts associated with said data item represents at least one from the group of the meaning of said data item and information relevant to said data item (see col. 11, lines 8-15).

*Claim Rejections - 35 USC § 103*

46. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

47. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

48. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the

contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

49. Claims 20 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Caid et al.** (U.S. Patent 5,619,709) as applied to claims 16-19, 21-24, 27, 29, 31-33, 35, 37, 39, 40, 42-45, 48, 50, 52-54, 56 and 58 above, and further in view of **Shmueli et al.** (U.S. Patent 6,044,375).

50. Regarding claims 20 and 41, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Caid et al.** does not explicitly teach a method wherein said text is derived from the conversion of a printed text to electronic form.

**Shmueli et al.**, however, teaches a method wherein said text is derived from the conversion of a printed text to electronic form (see col. 1, lines 35-51).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the references, since they are both concerned with the same field of endeavor, that is, the searching on a document database for relevant documents (see **Caid et al.**, Abstract; see **Shmueli et al.**, Abstract).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to derive text by converting printed text to electronic form, since the old, manual methods of metadata extraction to facilitate document searching are no longer practical (see **Shmueli et al.**, col. 1, lines 24-34; see also col. 2, lines 34-36).

51. Claims 28, 30, 49 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Caid et al.** (U.S. Patent 5,619,709) as applied to claims 16-19, 21-24, 27, 29, 31-33, 35, 37, 39, 40, 42-45, 48, 50, 52-54, 56 and 58 above, and further in view of **Ryan et al.** (U.S. Patent 6,421,675).

52. Regarding claims 28 and 49, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Caid et al.** does not explicitly teach a method wherein said text is a domain name or a full URL.

**Ryan et al.**, however, teaches a method wherein said text is a domain name or a full URL (see col. 1, lines 25-29; see also Figure 4; see also col. 11, line 56 through col. 12, line 60 et seq.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the references, since they are both concerned with the same field of invention, that is, the retrieval of documents from a document repository (see **Caid et al.**, Abstract; see also **Ryan et al.**, Abstract).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate domain names or URLs into the semantic domain, since domain names and URLs can be used to designate a web site or web page, which is another type of document available to be searched and retrieved (see **Ryan et al.**, col. 1, lines 13-30).

53. Regarding claims 30 and 51, **Ryan et al.** additionally teaches a method wherein said text is web content (see disclosure that the data repository stores web addresses and the text stored on the web sites, col. 1, lines 25-29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate web content, since indexing the contents of web pages enables a user to perform searches and retrievals of web pages from a data repository of documents, wherein the some of the documents are web pages (see **Ryan et al.**, col. 1, lines 13-30).

---

54. Claims 36, 38, 57 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Caid et al.** (U.S. Patent 5,619,709) as applied to claims 16-19, 21-24, 27, 29, 31-33, 35, 37, 39, 40, 42-45, 48, 50, 52-54, 56 and 58 above, and further in view of **Tengi** ("Design and Implementation of the WordNet Lexical Database and Searching Software").

---

55. Regarding claim 36, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Caid et al.** does not explicitly teach a method wherein said set of concepts associated with said data item is specified by a user.

**Tengi,** however, teaches a method wherein said set of concepts associated with said data item is specified by a user (see discussion of different search types in section 4.5 Retrieving Lexical Information, pages 117-119; see also the different searches available in the WordNet system, table 4.5; see particularly the disclosure in section 4.6.1, page 120, that a search can be limited by entering a list of sense numbers in the "Senses:" box, said senses corresponding to the claimed 'set of concepts' which represent at least one of the meaning of said data item; see also illustration of word 'senses' in Figure 4.4, page 123).

It would have been obvious to one of ordinary skill in the art at the time of the invention to allow the user to specify the set of concepts, since it is not always desirable to retrieve all syntactic categories or all word senses (see page 107, second and third paragraphs; see also page 119, first full paragraph).

56. Regarding claim 38, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Caid et al.** does not explicitly teach a method further enabling a user to select at least one meaning from the set of possible meanings for said data item in order to provide the correct interpretation for establishing a set of concepts representing the meaning of the data item.

**Tengi**, however, teaches a method further enabling a user to select at least one meaning from the set of possible meanings for said data item in order to provide the correct interpretation for establishing a set of concepts representing the meaning of the data item (see Figures 4.3 and 4.4; see also the disclosure that a specific word sense can be selected by the user, sections 4.6.1 Searching the Database, and 4.6.2 Search Results, on pages 120-123).

It would have been obvious to one of ordinary skill in the art at the time of the invention to allow a user to choose a specific meaning of the word to be retrieved, since this will allow the retrieval of only that information desired by the user (see discussion of the selection of the sense in section 4.6.1 on page 120).

57. Regarding claim 57, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

---

**Caid et al.** does not explicitly teach a method wherein said set of concepts associated with said data item is specified by a user.

**Tengi**, however, teaches a method wherein said set of concepts associated with said data item is specified by a user (see discussion of different search types in section 4.5 Retrieving Lexical Information, pages 117-119; see also the different searches available in the WordNet system, table 4.5; see particularly the disclosure in section 4.6.1, page 120, that a search can be limited by entering a list of sense numbers in the "Senses:" box, said senses corresponding to the claimed 'set of

concepts' which represent at least one of the meaning of said data item; see also illustration of word 'senses' in Figure 4.4, page 123).

It would have been obvious to one of ordinary skill in the art at the time of the invention to allow the user to specify the set of concepts, since it is not always desirable to retrieve all syntactic categories or all word senses (see page 107, second and third paragraphs; see also page 119, first full paragraph).

58. Regarding claim 59, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Caid et al.** does not explicitly teach a method further enabling a user to select at least one meaning from the set of possible meanings for said data item in order to provide the correct interpretation for establishing a set of concepts representing the meaning of the data item.

**Tengi**, however, teaches a method further enabling a user to select at least one meaning from the set of possible meanings for said data item in order to provide the correct interpretation for establishing a set of concepts representing the meaning of the data item (see Figures 4.3 and 4.4; see also the disclosure that a specific word sense can be selected by the user, sections 4.6.1 Searching the Database, and 4.6.2 Search Results, on pages 120-123).

It would have been obvious to one of ordinary skill in the art at the time of the invention to allow a user to choose a specific meaning of the word to be retrieved, since this will allow the

retrieval of only that information desired by the user (see discussion of the selection of the sense in section 4.6.1 on page 120).

59. Claims 25, 34, 46, 47, 55, 60 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Caid et al.** (U.S. Patent 5,619,709) as applied to claims 16-19, 21-24, 27, 29, 31-33, 35, 37, 39, 40, 42-45, 48, 50, 52-54, 56 and 58 above, and further in view of **Eldring** (U.S. Patent 6,298,348).

60. Regarding claims 25 and 46, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Caid et al.** does not explicitly teach a method wherein said labeled entity is a person and where the labeling represents data about the person such as his interests or geographic location.

**Eldring**, however, teaches a method wherein said labeled entity is a person and where the labeling represents data about the person such as his interests or geographic location (see col. 2, lines 35-51; see also col. 7, lines 33-63; see also Figure 2D).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include information about a persons' interests or geographic location, since this would allow advertisements to be profiled against demographic information of a consumer, thus allowing targeted advertising and better response (see col. 1, lines 8-36).

61. Regarding claims 34, 47 and 55, **Eldring** additionally teaches a method wherein said data item and labeled entity is one from the group of an advertisement, a product or service or a category (see col. 7, lines 20-32; see also col. 7, line 64 through col. 8, line 65; see also Figures 2C, 3A and 3B).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include information about an advertisement or a product or service, since this would allow advertisements to be profiled against demographic information of a consumer, thus allowing targeted advertising and better response (see col. 1, lines 8-36).

62. Regarding claim 60, **Caid et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Caid et al.** does not explicitly teach a method wherein said second location is assigned a monetary value.

**Eldering**, however, teaches a method wherein said second location is assigned a monetary value (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to assign monetary value to said second location, since in this way the advertiser can be charged a price

commensurate with the value of the advertisement to the receiver and the advertiser (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

63. Regarding claim 65, **Eldering** additionally teaches a method wherein the price of retrieving the target data is dynamically calculated in response to an input query, the price of returning the target data in the result increasing with the relevance of its associated set of concepts to the query (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to dynamically calculate pricing as claimed, since this would allow content to be targeted specifically to consumers whose interests correlate with the advertisement (see col. 3, lines 46-56).

64. Claims 61, 62 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Caid et al.** (U.S. Patent 5,619,709) in view of **Eldring** (U.S. Patent 6,298,348) as applied to claims 25, 34, 46, 47, 55, 60 and 65 above, and further in view of **Ryan et al.** (U.S. Patent 6,421,675).

65. Regarding claim 61, **Caid et al.** and **Eldring** teach a method for searching a semantic space structured by a lexicon substantially as claimed, including a method wherein the price of retrieving target data is determined (see **Eldring**, discussion of determination of the price for viewing an advertisement, Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

Neither **Caid et al.** nor **Eldring** explicitly teaches a method wherein said price is determined by the monetary value of a set of concepts with which it is associated.

**Ryan et al.**, however, teaches a method wherein said price is determined by the monetary value of a set of concepts with which it is associated (see col. 32, lines 56-59; see also keyword bids 802 in Figure 23; see also col. 34, lines 27-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the price of retrieving target data by the monetary value of a set of concepts with which it is associated, since this would allow prices to be determined based upon content as determined by a document's location in semantic space.

66. Regarding claim 62, **Caid et al.** and **Eldring** teach a method for searching a semantic space structured by a lexicon substantially as claimed.

Neither **Caid et al.** nor **Eldring** explicitly teaches a method wherein the price of being included in a target data set is determined by the monetary value of a set of concepts with which it is associated.

**Ryan et al.**, however, teaches a method wherein said price is determined by the monetary value of a set of concepts with which it is associated (see col. 4, lines 57-67; see also col. 32, lines 56-59; see also keyword bids 802 in Figure 23; see also col. 34, lines 27-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the price of being included in target data by the monetary value of a set of concepts with which it is associated, since this would allow advertisers to target content to specific users who are likely to be interested in the product being advertised (see col. 4, lines 57-67).

67. Regarding claim 64, **Caid et al.** and **Eldring** teach a method for searching a semantic space structured by a lexicon substantially as claimed.

Neither **Caid et al.** nor **Eldring** explicitly teaches a method wherein the monetary value of a set of concepts is based on the cost of its sub-space in the semantic space.

**Ryan et al.**, however, teaches a method wherein the monetary value of a set of concepts is based on the cost of its sub-space in the semantic space (see col. 35, lines 3-24).

---

It would have been obvious to one of ordinary skill in the art at the time of the invention to base the monetary value of a set of concepts on the cost of its sub-space in the semantic space, since this would allow content to be targeted based on clusters of words embodying concepts, rather than relying on specific keywords which may or may not be submitted by a user in a search (see col. 35, lines 3-24).

---

68. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Caid et al.** (U.S. Patent 5,619,709) in view of **Voorhees** ("Query Expansion using Lexical-Semantic Relations").

69. Regarding claim 67, **Caid et al.** teaches a method of generating a search result in response to a search request substantially as claimed, comprising:

a) organizing concepts according to their meaning into a lexicon of predefined known relationships between the concepts, said lexicon defining elements of a semantic space (see extensive discussion of the development of a lexicon, at col. 5, line 15 through col. 9, line 46);

b) receiving the search request and associating said search request with a first set of concepts from said lexicon (see disclosure regarding retrieval process, col. 11, line 6 through col. 12, line 30, wherein 'query vector' is analogous to the claimed search request); and

c) searching the target data set for elements generating a match with the set of search terms (see disclosure regarding retrieval process, col. 11, line 6 through col. 12, line 30, wherein the distance between vectors is calculated to find the closest summary vector to the query vector, col. 12, lines 7-8).

---

**Caid et al.** does not explicitly teach a method wherein the search terms are expanded, wherein the added terms are close in meaning to the original search request based on predetermined semantic relationships defined by the lexicon.

**Voorhees**, however, teaches a method wherein search terms are expanded, and wherein the terms in the larger set of search terms are close in meaning to the search request based on semantic relationships defined by the lexicon (see section 1 Introduction, pages 61-62).

It would have been obvious to one of ordinary skill in the art at the time of the invention to perform query expansion as claimed, since this eases the user's burden when selecting query words, making the retrieval of matching documents less dependent upon the selection of specific query words (section 1 Introduction, pages 61-62).

70. Claim 72 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Caid et al.** (U.S. Patent 5,619,709) in view of **Voorhees** ("Query Expansion using Lexical-Semantic Relations") as applied to claim 67 above, and further in view of **Eldring** (U.S. Patent 6,298,348).

71. Regarding claim 72, **Caid et al.** and **Voorhees** teach a method of generating a search result in response to a search request substantially as claimed.

Neither **Caid et al.** nor **Voorhees** explicitly teaches a method wherein the target location corresponds to a monetary value and wherein matched target data is ordered in accordance with closeness in meaning between the search request and the larger set of search terms, wherein the monetary value is based on the closeness in meaning.

**Eldering**, however, teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a policy of pricing of advertisements based on the perceived relevance to the viewer,

since an advertisement transmitted to a person who would be very interested in the product would be more valuable to the advertiser than one transmitted to a user who is unlikely to be interested in the product, and so would be worth spending more for transmission to such users (see col. 3, lines 46-56).

*Response to Arguments*

72. Applicant's arguments with respect to claims 16-25, 27-62, 64, 65, 67 and 72 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

73. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Gallant** (U.S. Patent 5,325,298) teaches a method for generating context vectors for use in a document storage and retrieval system, wherein context vectors are fixed length lists of component values generated to approximate conceptual relationships.

**Koll** ("Information Retrieval Theory and Design Based on a Model of the User's Concept Relations") teaches the system-as-theory (SAM) model of information retrieval, comprising an assessment of the similarity between requests and documents.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke S. Wassum whose telephone number is 703-305-5706. The examiner can normally be reached on Monday-Friday 8:30-5:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 703-305-9790. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

In addition, INFORMAL or DRAFT communications may be faxed directly to the examiner at 703-746-5658.

Customer Service for Tech Center 2100 can be reached during regular business hours at (703) 306-5631, or fax (703) 746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Luke S. Wassum
Art Unit 2177

lsw
July 11, 2003